Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						1	3	8	0	/	3	H	Signature	

Paper Reference(s)

1380/3H

Examiner's use only

Team Leader's use only

O Level

Mathematics (Linear) – 1380

Paper 3 (Non-Calculator)

Sequences

Past Paper Questions

Arranged by Topic

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page.
Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

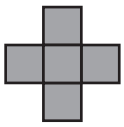
The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 26 questions in this question paper. The total mark for this paper is 100.
There are 24 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

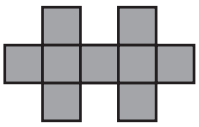
Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

Leave blank

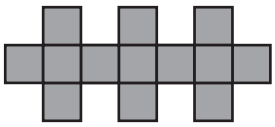
1. Here are some patterns made from squares.



Pattern number 1

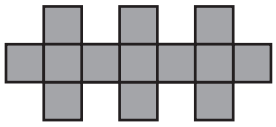


Pattern number 2



Pattern number 3

(a) The diagram below shows part of Pattern number 4
Complete the diagram for Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of squares	5	9	13		

(1)

(c) Find the number of squares used for Pattern number 10

.....

(1)

Q1

(Total 3 marks)

Leave blank

2. Here are some patterns made using sticks.

Pattern number 1 Pattern number 2 Pattern number 3

(a) In the space below, complete Pattern number 4.

Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	4	7	10		

(1)

(c) How many sticks are used in Pattern number 10?

.....

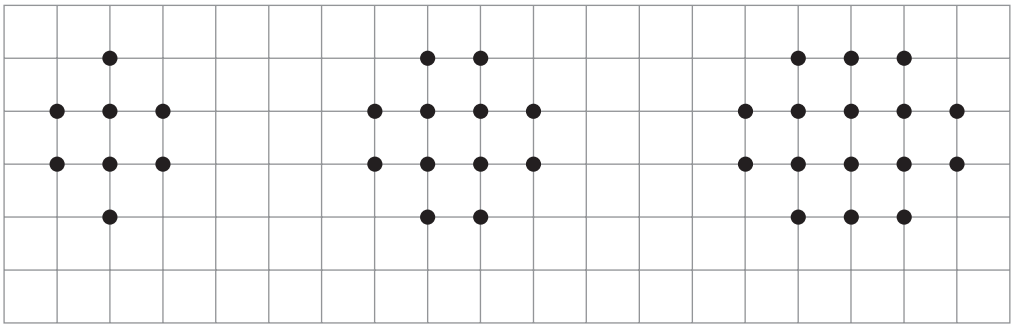
(1)

Q2

(Total 3 marks)

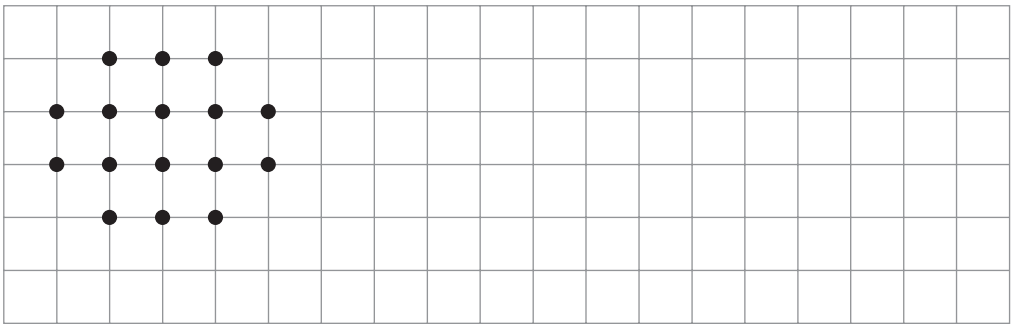
Leave blank

3. Here are some patterns made with dots.



Pattern number 1 Pattern number 2 Pattern number 3

(a) In the space below, complete Pattern number 4



Pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	8	12	16		

(2)

Q3

(Total 3 marks)

Leave blank

4. The first even number is 2

(a) Write down the 3rd even number.

.....

(1)

Here are some patterns made from sticks.

Pattern number 1 Pattern number 2 Pattern number 3

(b) Complete Pattern number 4

Pattern number 4

(1)

(c) Complete the table.

Pattern number	1	2	3	4	5
Number of sticks	3	6	9		

(2)

Jenny wants to find the number of sticks in Pattern number 100

(d) Write down a method she could use.

.....

.....

(1)

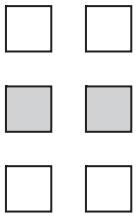
Q4

(Total 5 marks)

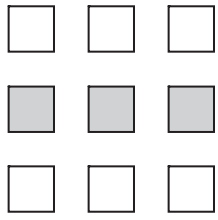
Leave blank

5. Here is a sequence of patterns made from grey squares and white squares.

Pattern Number 1

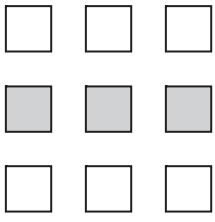


Pattern Number 2



Pattern Number 3

(a) Complete Pattern Number 4



Pattern Number 4

(1)

(b) Complete the table.

Pattern Number	1	2	3	4	5
Total number of squares	3	6	9		

(1)

One of the patterns in the sequence has 10 grey squares.

(c) How many white squares does this pattern have?

.....

(1)

Another pattern in the sequence has a total of 18 squares.

(d) How many grey squares does the pattern have?

.....

(1)

Q5

(Total 4 marks)

Leave blank

6. Here are the first four terms of a number sequence.

5 9 13 17

(a) (i) Write down the next term of the number sequence.

.....

(ii) Explain how you found your answer.

.....

(2)

The 25th term of the number sequence is 101

(b) Work out the 26th term of the number sequence.

.....

(1)

Q6

(Total 3 marks)

Leave blank

7 . The nth term of a number sequence is given by $3n+1$

(a) Work out the first **two** terms of the number sequence.

.....

(1)

Here are the first four terms of another number sequence.

1 5 9 13

(b) Find, in terms of n, an expression for the nth term of this number sequence.

.....

(2)

Q7

(Total 3 marks)